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JECP/ED Manual

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About

JECP/ED is a Java program with graphic interface for simulating electron diffraction pattern.

It is designed and written by Dr. Xingzhong in University of Nebraska-Lincoln. This is verision 12-2002.

It can be used for simulating electron diffraction zone pattern(ZOLZ with/without FOLZ), it allows to select zone axis, high voltage, sample thickness in the simulation, optional to show index, intensity and Laue center, featureed with manuniplating the pattern with slightly tilting, 360 degree rotation, zoom. The diffraction intensity is calculated on the basis of the kinematical theory.

The program is extended to simulate electron diffraction with a precession of incident electorn beam. The precession tecknique is one of the best way to get near-kinematical electron diffraction data in experiement.

Instruction

It is easy and straightwards to use the program.
Download jecp.zip file from http://www.unl.edu/CMRAcfem/XZLI/programs.htm,
jecp.zip contains
ElecDiff.bat
jecp.jar
samples*.dat (structure files for demo version)
jecp_ed_help.htm (this file).
unzip these files to one fold, to start the program, double click ElecDiff.bat (PC) or in command line, type java -jar jecp.jar

fill with registeration code[press Enter key] and click JECP buttom, or click Demo buttom for evaluation and teching purpose.

From menu bar, load new structure file or use default file (Fe), fill in the zone axis, e.g., 0 0 1 or 1 -1 0 or 1 2 3 [press Enter key] to calculate the diffraction pattern. Choose kinematical setting in menu bar to calculate kinematical diffraction intensity if the structure file including

atom type, positions, occuption.

To change the value in other field and slide bar to adjust the pattern.
To print the pattern, select print in menu bar.

For precession experiment, choose precession setting in menu bar.
to select process or result options in [show precession].
change value in [steps pre cycle] or in [time pre step] or
[beam tilt angle], press [Enter] key to start simulation.

Demo mode

In this mode the program can only handle the input files in examples
fold, i.e., AlmFe.data, NaCl.dat, Mg.dat, Si.dat and default file (Fe).
To become a registered user, please e-mail: xli2@unl.edu
Updated info in http://www.unl.edu/CMRAcfem/staff/xzli/programs.htm